

We claim:

1. Mold cleaning apparatus comprising a manifold adapted to be coupled to a suction device, a first conduit extending from the manifold and having a first opening remote from the manifold, and a second conduit extending from the manifold and having a second opening remote from the manifold, the first and the second openings being directed in opposite directions, and the first conduit having a section with a cross-sectional area which is less than cross-sectional area at any point along the length of the second conduit.

2. Apparatus according to claim 1, wherein the first opening is adapted to engage an upper mold surface of a mold and the second opening is adapted to engage a lower mold surface of a mold.

3. Apparatus according to claim 2, wherein the first and the second openings each comprise a flexible member which is adapted to engage with the respective mold surface.

4. Apparatus according to claim 3, wherein the flexible members are elastically deformable.

5. Apparatus according to claim 1, further comprising fluid injection means coupled to the second conduit, adjacent to the second opening, to inject fluid into the opening of the second conduit.

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6. Apparatus according to claim 5, wherein the first opening is adapted to engage an upper mold surface of a mold and the second opening is adapted to engage a lower mold surface of a mold, and the fluid injection means is mounted on the second conduit to inject fluid towards the lower mold surface when the second opening is engaged with the lower mold surface.

7. Apparatus according to claim 1, further comprising another manifold, a third conduit extending from the other manifold to the first opening and a fourth conduit extending from the other manifold to the second opening.

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8 Molding apparatus for molding a material around a semiconductor chip and a substrate on which the semiconductor chip is mounted, the mold comprising a lower mold half and an upper mold half, the mold halves being movable between an open position, in which a substrate and a semiconductor chip mounted thereon can be inserted into the mold halves and a molded substrate and semiconductor chip can be removed from the mold halves, and a closed position, in which a molding operation can be performed; a first movable carriage adapted to insert a substrate and a semiconductor chip mounted thereon into the mold; a second carriage adapted to remove a molded substrate and semiconductor chip from the mold; a first mold cleaning device mounted on the first carriage to clean a surface of the mold halves before a substrate and a semiconductor chip are placed in the mold; and a second cleaning device mounted on the second carriage to clean the mold halves after a molded substrate and semiconductor chip is removed from the mold.

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9. Apparatus according to claim 8, wherein the first cleaning device comprises a brush which engages with a surface of the mold halves during cleaning.

5 10. Apparatus according to claim 8 or claim 9, wherein the first cleaning device comprises a fabric material which engages with a surface of the mold halves during cleaning.

Suba!

11. Apparatus according to claim 8, wherein the first cleaning device is
10 adapted to clean the lower mold half.

12. Apparatus according to claim 8, wherein the second mold cleaning device comprises a suction cleaning device.

15 13. Apparatus according to claim 12, wherein the suction cleaning device comprises a mold cleaning apparatus comprising a manifold adapted to be coupled to a suction device, a first conduit extending from the manifold and having a first opening remote from the manifold, and a second conduit extending from the manifold and having a second opening remote from the
20 manifold, the first and the second openings being directed in opposite directions, and the first conduit having a section with a cross-sectional area which is less than cross-sectional area at any point along the length of the second conduit.

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